UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,282	12/31/2003	Pak-Lung Seto	P17726	9205

7590   09/13/2006

Grossman, Tucker, Perreault, and Pfleger, PLLC
c/o PortfolioIP
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER
CHASE, SHELLY A

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2003*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration. ·

5)☒ Claim(s) *20 and 21* is/are allowed.

6)☒ Claim(s) *1-3,7-9,13-18 and 22-25* is/are rejected.

7)☒ Claim(s) *4-6,10-12,19 and 26-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.
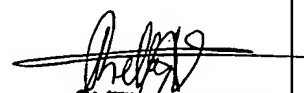
Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

SHELLY CHASE
PRIMARY EXAMINER

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *3-05 & 11-05*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 to 28 are presented for examination.

Information Disclosure Statement

2.   The references listed in the information disclosure statement submitted on 3-28-

2005 and 11-10-2005 have been considered by the examiner (see attached PTO-1449).

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 22 to 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled

in the art to which it pertains, or with which it is most nearly connected, to make

and/or use the invention. Claims 22 and 23 are single means claims and the scope

of the claims is not commensurate with the specification.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5.   Claims **1, 3, 7, 9, 13** to **17, 22, 23,** and **25** are rejected under 35 U.S.C. 102(e) as being anticipated by Van Meter, III (USP 6964008 B1).

Claim **1**:

Van Meter, III teaches data checksum method and apparatus comprising: transferring data segments (48) read from a disk into memory (38) wherein a corresponding checksums for the data segments are computed and stored in a checksum list (42) (see col. 5, lines 1 to 20). Van Meter, III teaches that data are transferred out of the memory in packets (60) wherein packet (60) includes data segments (48), data segment fragments (62) and complementary data segment fragments (64) (see fig. 5a & col. 5, lines 30 to 45).

Van Meter, III further teaches that the first packet #0 ("first frame") includes data segments number 0 ("first portion") and number 1 ("second portion") and data fragment (2) wherein data in the packet is separated according to boundary (177) (see fig. 5a-5b & col. 5, lines 32 et seq.). Van Meter, III teaches that for each complete data segment

read from memory, a checksum is computed and a data packet (150) comprises TCP/IP

header and data payload wherein the data segments and data fragment are used to

compose of the data payload (see col. 10, lines 1 to 11).

As per claim **3**, Van Meter, III teaches that a packet includes multiple data

segments and that each data segment is read from the memory (see col. 6, lines 10 et

seq.).

Claim **7**:

Van Meter, III teaches data checksum method and apparatus comprising: a data

controller (30) that includes a checksum circuit (36) and a buffer memory (38) for storing

the data segments retrieved from a disk as well as storing the checksum in a list (see

fig. 3 & col. 4, lines 65 et seq.). Van Meter, III teaches that the apparatus perform the

steps of: transferring data segments (48) read from a disk into memory (38) with its

corresponding checksums that was computed and stored in a checksum list (42) (see

col. 5, lines 1 to 20). Van Meter, III teaches that data are transferred out of the memory

in packets (60) wherein packet (60) includes data segments (48), data segment

fragments (62) and complementary data segment fragments (64) (see fig. 5a & col. 5,

lines 30 to 45).

Van Meter, III further teaches that the first packet #0 ("first frame") includes data

segments number 0 ("first portion") and number 1 ("second portion") and data fragment

(2) wherein data in the packet is separated according to boundary (177) (see fig. 5a-5b

& col. 5, lines 32 et seq.). Van Meter, III teaches that for each complete data segment

read from memory, a checksum is computed and a data packet (150) comprises TCP/IP

header and data payload wherein the data segments and data fragment are used to compose of the data payload (see col. 10, lines 1 to 11).

As per claim **9**, Van Meter, III teaches that a packet includes multiple data segments and that each data segment is read from the memory (see col. 6, lines 10 et seq.).

Claim **13**:

Van Meter, III teaches data checksum method and apparatus comprising: a computer (10) comprising a disk drive with drive electronics (26) interconnected by an input/output bus (22), the apparatus comprising: transferring data segments (48) read from a disk into memory (38) wherein a corresponding checksums for the data segments are computed and stored in a checksum list (42) (see col. 5, lines 1 to 20). Van Meter, III teaches that data are transferred out of the memory in packets (60) wherein packet (60) includes data segments (48), data segment fragments (62) and complementary data segment fragments (64) (see fig. 5a & col. 5, lines 30 to 45).

Van Meter, III further teaches that the first packet #0 ("first frame") includes data segments number 0 ("first portion") and number 1 ("second portion") and data fragment (2) wherein data in the packet is separated according to boundary (177) (see fig. 5a-5b & col. 5, lines 32 et seq.). Van Meter, III teaches that for each complete data segment read from memory, a checksum is computed and a data packet (150) comprises TCP/IP header and data payload wherein the data segments and data fragment are used to compose of the data payload (see col. 10, lines 1 to 11).

As per claim **14**, Van Meter, teaches that the drive electronic is connected to the bus system through bus adapter (18) (see fig. 1 and col. 4, lines 18 to 23) wherein the I/O adapter is an interface card (see col. 14, lines 65 to 68).

As per claim **15**, Van Meter, teaches that the drive electronic includes a controller (30) that communicates packets according to TCP/IP protocol (see col. 9, lines 14 to 25).

As per claim **16**, Van Meter, III teaches that the controller includes a memory (38) such as a RAM that retrieves data from a disk drive (29) (see col. 5, lines 1 to 5).

As per claim **17**, Van Meter, III teaches that the invention may be applied to any network disk drive or tape drive (see col. 9, lines 1 to 11), which provides adequate support for the limitation of " wherein said one or more mass storage device comprises a redundant array of independent disks (RAID)."

Claims **22** and **23**:

Van Meter, III teaches data checksum method and apparatus comprising: transferring data segments (48) read from a disk into memory (38) wherein a corresponding checksums for the data segments are computed and stored in a checksum list (42) (see col. 5, lines 1 to 20). Van Meter, III teaches that data are transferred out of the memory in packets (60) wherein packet (60) includes data segments (48), data segment fragments (62) and complementary data segment fragments (64) (see fig. 5a & col. 5, lines 30 to 45).

Van Meter, III further teaches that the first packet #0 ("first frame") includes data

segments number 0 ("first portion") and number 1 ("second portion") and data fragment

(2) wherein data in the packet is separated according to boundary (177) (see fig. 5a-5b

& col. 5, lines 32 et seq.). Van Meter, III teaches that for each complete data segment

read from memory, a checksum is computed and a data packet (150) comprises TCP/IP

header and data payload wherein the data segments and data fragment are used to

compose of the data payload (see col. 10, lines 1 to 11).

As per claim **25**, Van Meter, III teaches that a packet includes multiple data

segments and that each data segment is read from the memory (see col. 6, lines 10 et

seq.).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 2, **8, 18** and **24** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Van Meter, III in view Westby (USP 6324669 B1).

As per claims **2, 8, 18** and **24**, Van Meter, III teaches that the apparatus and

method uses small computer system interconnect (SCSI) bus for communication and

using the TCP/IP protocol as well as any network protocol can be applied when using

UDP packets (se col. 4, lines 15 to 20 and col. 9, lines 11 et seq.). Although, Van

Meter, III, teaches the use of any network protocol, Van Meter, III fails to specifically

teach that the first and second frame are in accordance with one of serial attached small

computer system interface (SAS) protocol and fibre channel.

Westby in an analogous art teaches a method and an apparatus for checking data

integrity in an on-chip memory wherein a fibre channel loop is used in the serial

communication for the upper level of the SCSI protocol. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to

modify the serial communication method of Van Meter, III to include the fibre channel

loop as taught by Westby since Westby, teaches that using the fiber channel in the

upper section of the SCSI protocol provides an enhanced ability for data verification in a

computer system or network (see col. 7, lines 1 to 15). This modification would have

been obvious because a person of ordinary skill in the art would have been motivated to

employ an improved method for checking data integrity as taught by Westby.

Allowable Subject Matter

8.   Claims 4 to 6, 10 to 12, 19 and 26 to 28 are objected to as being dependent upon

a rejected base claim, but would be allowable if rewritten in independent form including

all of the limitations of the base claim and any intervening claims.

9.   Claims 20 to 21 are allowed.

10.   The following is a statement of reasons for the indication of allowable subject

matter: the primary reason for the allowance of the claims is the inclusion of the

limitation of "analyzing a second protected data block of said at least one out of order
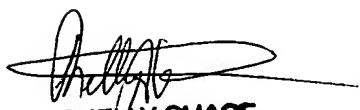
frame for an error if said second protected data block starts concurrently with said at least one out of order frame." The claimed limitation is not taught in the prior art made of record.

Conclusion

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelly A. Chase whose telephone number is 571-272-3816. The examiner can normally be reached on Mon-Thur from 8:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SHELLY CHASE
PRIMARY EXAMINER